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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,280	02/12/2004	Eric Schwartz	248789US41	3523

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ALEXANDRIA, VA 22314

EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,280

Applicant(s)

SCHWARTZ ET AL.

Examiner

Christopher Verdier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2-12-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Drawings

Figures 5-6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because lines 1-10 are superfluous and should be deleted. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: Appropriate correction is required.

On page 1, line 1, "Title" should be changed to -- A turbine vane cooled by a reduced cooling air leak --.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, last line, "therethrough" is indefinite, because it is unclear if this refers to the leakage zone, the inside edge, or the recess.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2 and 7, as far as they are definite and understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuno 6,089,822 in view of North 5,609,466. Fukuno (figures 1-3) discloses a turbomachine turbine vane 17 substantially as claimed, including a

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multiply-perforated liner 47 (having perforations 71) defining an unnumbered annular cavity between an outside wall of the liner and an inside wall of the vane, an air admission opening 44 for feeding the inside of the liner with cooling air and an air exhaust opening (unnumbered, near 73) for exhausting a fraction of the cooling air from the vane, the liner being free at an inner end to slide along an inside edge of the vane under the effects of relative thermal expansion between the liner and the inside wall of the vane, the annular gap between the free end of the liner and the inside edge of the vane defining a leakage zone (near 73) for cooling air, wherein the inside edge includes a recess 92 for generating head loss in the leakage zone so as to reduce the flow rate of cooling air passing therethrough. The recess is made over part of the periphery of the inside edge. A turbomachine turbine 3 includes plural cooled vanes 17.

However, Fukuno does not explicitly disclose that the liner 47 is secured to the vane at one end, rather unnumbered flanges of the liner appear to be resting on outer shroud 27.

North (figure 3) shows a turbomachine turbine vane 17 having a liner 47 that is secured/attached to the vane at an outer end 27 of a shroud (see column 3, lines 50-52), for the purpose of retaining the liner to the vane, preventing the liner from falling out of the vane.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the turbine vane of Fukuno such that the liner 47 is secured to the vane at one end, as taught by North, for the purpose of retaining the liner to the vane, preventing the liner from falling out of the vane.

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Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuno 6,089,822 and North 5,609,466 as applied to claim 2 above, and further in view of Soechting 6,761,529. The modified turbine vane of Fukuno shows all of the claimed subject matter, including a recess 92, but does not explicitly disclose that the recess is circularly symmetrical.

Soechting (figures 5-8) shows a cooled turbine vane 25 having cooling holes 92, in the form of recesses that are circularly symmetrical, for the purpose of providing for exhaust of used cooling air from the vane without turbulence.

It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified turbine vane of Fukuno such that the recess 92 is circularly symmetrical, as taught by Soechting, for the purpose of providing for exhaust of used cooling air from the vane without turbulence.

Allowable Subject Matter

Claims 4-6 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

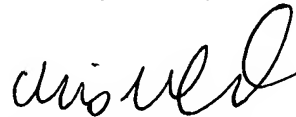
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
February 8, 2005


Christopher Verdier
Primary Examiner
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